

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: WOLV DRY AND VERT CALC (E-75) (P068)

Activity Description: Wolverine Dryer and Vertical Calciner

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Wolverine dryer and vertical calciner (process equipment) with a fabric filter baghouse	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 2.91 pounds per hour
Wolverine dryer and vertical calciner (fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
Wolverine dryer and vertical calciner (all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The pressure drop across the baghouse shall be maintained within the range of 2 to 6 inches of water while the emissions unit is in operation.
2. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: WOLV DRY AND VERT CALC (E-75) (P068)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 2.91 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
3. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: WOLV DRY AND VERT CALC (E-75) (P068)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Wolverine dryer and vertical calciner with a fabric filter baghouse	OAC rule 3745-31-05 PTI 02-10269	The emissions of oxides of nitrogen (NOx) shall not exceed 0.10 lb/MMBTU actual heat input and 0.79 pound per hour.

See section B.II.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The collection efficiency of the air pollution capture hoods for this emissions unit shall be sufficient to minimize or eliminate visible emissions of fugitive dust at all points of capture. The permittee shall maintain all hoods and enclosures in good operating condition. The collection efficiency shall be considered adequate if visible particulate emissions of fugitive dust do not exceed 20% opacity as a three-minute average.

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the NOx emission limitation of 0.10 lb/MMBTU actual heat input and 0.79 lb/hr shall be determined by using the emission factors from AP-42 for natural gas combustion (Section 1.4, 1998 update).
2. Compliance with the visible emission limitation in section B.II of these terms and conditions shall be determined in accordance with the following methods:

Applicable compliance method: Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: P-K BLENDER (E-76) (P069)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: P-K BLENDER (E-76) (P069)
Activity Description: #2 PK Blender (Copper on alumina)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P-K blender: copper on alumina with a fabric filter baghouse	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 2.31 pounds per hour Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: P-K BLENDER (E-76) (P069)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 2.31 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: P-K BLENDER (E-76) (P069)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P-K blender: copper on alumina with a fabric filter baghouse	OAC rule 3745-31-05 PTI 02-10269	See section B.II.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The collection efficiency of the air pollution capture hoods for emissions unit P069 shall be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at all points of capture. The permittee shall maintain all hoods and enclosures in good operating condition. The collection efficiency shall be considered adequate if visible particulate emissions of fugitive dust do not exceed 20% opacity as a three-minute average.

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the visible emission limitation in section B.II of these terms and conditions shall be determined in accordance with the following methods:

Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: CU/CR STRIKE (E-77) (P070)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CU/CR STRIKE (E-77) (P070)

Activity Description: Copper Chromite Strike Tanks

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Copper chromite strike tanks with a wet scrubber	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 2.58 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The pressure drop across the Interstates Plastics scrubber (model #15) shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.
2. The scrubber water flow rate to the Interstates Plastics scrubber shall be continuously maintained at a value of not less than 25 gallons per minute at all times while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the Interstates Plastics scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information once each day:

- a. The pressure drop across the scrubber, in inches of water.
- b. The scrubber water flow rate, in gallons per minute.
- c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: CU/CR STRIKE (E-77) (P070)

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across the scrubber.
 - b. The scrubber water flow rate.

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 2.58 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: CU/CR STRIKE (E-77) (P070)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: P&S DRIER IN HC-11 (E-84) (P077)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: P&S DRIER IN HC-11 (E-84) (P077)

Activity Description: P & S Dryer in HC-11

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P & S belt dryer (process equipment) with a fabric filter baghouse	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 3.53 pounds per hour
P & S belt dryer (fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
P & S belt dryer (all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The pressure drop across the baghouse shall be maintained within the range of 1 to 5 inches of water while the emissions unit is in operation.
2. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: P&S DRIER IN HC-11 (E-84) (P077)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 3.53 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.
3. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: P&S DRIER IN HC-11 (E-84) (P077)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #5 (E-13) (P080)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ROTARY CALCINER #5 (E-13) (P080)

Activity Description: MISCELLANEOUS CATALYSTS

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
* Rotary calciner #5 with a fabric filter baghouse (process equipment)	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 2.28 pounds per hour
Rotary calciner #5 (fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
Rotary calciner #5 (all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit, (excluding the stack(s) serving the fuel burning equipment). The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #5 (E-13) (P080)

IV. Reporting Requirements (continued)

2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 2.28 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.
3. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC Rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC Rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Rotary calciner #5 with Trimer scrubber for NOx control (process equipment)		

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. Trimer Scrubber Operational Restrictions

The pressure drop across the first stage of the scrubber shall be continuously maintained between 0 and 0.6 inches of water at all times while the emissions unit is in operation.

The pressure drop across the second stage of the scrubber shall be continuously maintained between 1 and 3 inches of water at all times while the emissions unit is in operation.

The pressure drop across the third stage of the scrubber shall be continuously maintained between 3 and 5 inches of water at all times while the emissions unit is in operation.

The scrubber water flow rate to each stage of the scrubber shall be continuously maintained at a value of not less than 50 gallons per minute at all times while the emissions unit is in operation.

2. Trimer pH Operational Restrictions

The pH of the scrubber liquor shall be maintained between 10 and 12 s.u.

III. Monitoring and/or Record Keeping Requirements

1. Trimer Scrubber Monitoring and Recordkeeping Requirements

The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber stages and the scrubber water flow rate to each stage while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day (at a minimum):

- a. The pressure drop across each stage of the scrubber, in inches of water, on a once per shift basis.
- b. The scrubber water flow rate to each stage of the scrubber, in gallons per minute, on a once per shift basis.
- c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #5 (E-13) (P080)

III. Monitoring and/or Record Keeping Requirements (continued)

2.a. Trimer scrubber pH Monitoring and Recordkeeping Requirements

The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

2.b. The permittee shall record the pH of the scrubber liquor on a once per shift basis.

IV. Reporting Requirements

1. Trimer Scrubber Reporting Requirements

The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels:

- a. The static pressure drop across each scrubber stage.
- b. The scrubber water flow rate to each stage.

2. Trimer Scrubber pH Reporting Requirements

The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: SHUTTLE KILN #1 (E-88) (P083)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SHUTTLE KILN #1 (E-88) (P083)

Activity Description: Shuttle kiln #1

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Shuttle kiln #1 with two fabric filter baghouses	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 1.62 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: SHUTTLE KILN #1 (E-88) (P083)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.62 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: SHUTTLE KILN #1 (E-88) (P083)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Shuttle kiln #1 with two fabric filter baghouses	OAC rule 3745-31-05 PTI 02-2017	Emissions of particulate matter shall not exceed 0.02 gr/dscf of exhaust gases and 3.23 tons per year.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 0.02 gr/dscf of exhaust gases shall be determined in accordance with Method 5 of 40 CFR Part 60, Appendix A. No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the particulate matter emission limitation of 3.23 tons per year shall be determined by calculations using a compilation of annual hours of operation of this emissions unit, the allowable PM emission rate of 0.02 gr/dscf and the maximum air flow rate of 4600 cubic feet per minute.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOT
Facility ID: 02-47-04-0195
Emissions Unit: GEN CAT P&S DRYERS #2 & #3 (P086)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: GEN CAT P&S DRYERS #2 & #3 (P086)

Activity Description: General Catalyst Dryers

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
General catalyst dryers #1-#3 (process equipment) with two wet scrubbers, see A.2.a.	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 3.38 pounds per hour
General catalyst dryers #1-#3 (fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
General catalyst dryers #1-#3 (all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

- 2.a. Dryer #2 vents to Viron scrubber #1. Dryer #3 vents to Viron scrubber #2. Dryer #1 is not controlled.

II. Operational Restrictions

- 1.a. The pressure drop across each scrubber shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.
- 1.b. The scrubber water flow rate to each scrubber shall be continuously maintained at a value of not less than 2 gallons per minute at all times while the emissions unit is in operation.
2. The permittee shall burn only natural gas in this emissions unit.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: GEN CAT P&S DRYERS #2 & #3 (P086)

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information once each day:

- a. The pressure drop across each scrubber, in inches of water.
 - b. The scrubber water flow rate, in gallons per minute.
 - c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across the scrubber.
 - b. The scrubber water flow rate.
2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 3.38 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.
3. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: GEN CAT P&S DRYERS #2 & #3 (P086)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
General catalyst dryers #1-#3 (process equipment) with two wet scrubbers. See B.2.a.		

2. Additional Terms and Conditions

- 2.a. Dryer #2 vents to Viron scrubber #1. Dryer #3 vents to Viron scrubber #2. Dryer #1 is not controlled.

II. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6 to 11 s.u.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a once per shift basis.
- b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

IV. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: #2 SHUTTLE KILN (E-92) (P089)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: #2 SHUTTLE KILN (E-92) (P089)

Activity Description: #2 Shuttle Kiln

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Shuttle kiln #2 with two fabric filter baghouses	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 0.551 pound per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: #2 SHUTTLE KILN (E-92) (P089)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 0.551 pound per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: #2 SHUTTLE KILN (E-92) (P089)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Shuttle kiln #2 with two fabric filter baghouses	OAC rule 3745-31-05 PTI 02-3232	Emissions of particulate matter shall not exceed 0.55 pound per hour

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 0.55 pound per hour shall be determined in accordance with Method 5 of 40 CFR Part 60, Appendix A. No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: #2 SHUTTLE KILN (E-92) (P089)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Shuttle kiln #2 with two fabric filter baghouses	OAC rule 3745-31-05 PTI 02-3232	Emissions of particulate matter shall not exceed 0.55 pound per hour

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 0.55 pound per hour shall be determined in accordance with Method 5 of 40 CFR Part 60, Appendix A. No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: SPIN FLASH DRIER (E-100) (P094)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SPIN FLASH DRIER (E-100) (P094)

Activity Description: Spin Flash Dryer

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Spin flash dryer	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 3.07 pounds per hour Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: SPIN FLASH DRIER (E-100) (P094)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 3.07 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: SPIN FLASH DRIER (E-100) (P094)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property,
and/or Equipment

Applicable Rules/
Requirements

Applicable Emissions
Limitations/Control
Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: COPPER CALCINER #2 (E-101) (P095)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: COPPER CALCINER #2 (E-101) (P095)
Activity Description: Copper Calciner # 2, 4.0 MMBtu/hr, indirect-fired

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Copper calciner #2 (process equipment) with three fabric filter baghouses	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 1.51 pounds per hour
Copper calciner #2 (fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
Copper calciner #2 (all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The pressure drop across each fabric filter baghouse shall be maintained within the range of 1 to 6 inches of water while the emissions unit is in operation.
2. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across each baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across each baghouse on a daily basis.
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse(s) did not comply with the allowable range specified above.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: COPPER CALCINER #2 (E-101) (P095)

IV. Reporting Requirements (continued)

2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.51 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.
3. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: COPPER CALCINER #2 (E-101) (P095)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Copper calciner #2 with three fabric filter baghouses	OAC rule 3745-31-05 PTI 02-10043	See B.I.2.a and B.I.2.b.

2. Additional Terms and Conditions

- 2.a The emission of particulate matter shall not exceed 0.01 gr/dscf of exhaust gases and 0.31 pound per hour.
- 2.b Visible particulate emissions from any stack shall not exceed 5% opacity as a six-minute average.

II. Operational Restrictions

1. The collection efficiency of the air pollution capture hoods for this emissions unit shall be sufficient to minimize or eliminate visible emissions of fugitive dust at all points of capture. The permittee shall maintain all hoods and enclosures in good operating condition. The collection efficiency shall be considered adequate if visible particulate emissions of fugitive dust do not exceed 20% opacity as a three-minute average.

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 0.01 gr/dscf of exhaust gases and 0.31 pound per hour shall be determined in accordance with Method 5 of 40 CFR Part 60, Appendix A.. No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC Rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the stack visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.
3. Compliance with the visible emission limitation in section B.II of these terms and conditions shall be determined in accordance with the following methods:

Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: BLDG 24 WEST TABLETTING (P097)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BLDG 24 WEST TABLETTING (P097)

Activity Description: West Bldg. 24 Tableting

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
West Bldg. 24 tableting with two fabric filter baghouses and a wet scrubber	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 1.62 pounds per hour
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: BLDG 24 WEST TABLETTING (P097)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.62 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: BLDG 24 WEST TABLETTING (P097)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: BLDG 25 EAST TABLETTING (P098)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BLDG 25 EAST TABLETTING (P098)

Activity Description: East Bldg.25 Tableting

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
East Bldg. 25 tableting, with a fabric filter baghouse	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 1.15 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: BLDG 25 EAST TABLETTING (P098)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.15 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: BLDG 25 EAST TABLETTING (P098)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: PK BLENDER #2 (E-103) (P099)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: PK BLENDER #2 (E-103) (P099)

Activity Description: 65 Cubic Foot PK Blender

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
65 cubic foot PK blender #2 with a fabric filter baghouse and a wet scrubber	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 3.48 pounds per hour
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: PK BLENDER #2 (E-103) (P099)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 3.48 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: PK BLENDER #2 (E-103) (P099)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
65 cubic foot PK blender #2 with a fabric filter baghouse and a wet scrubber	OAC 3745-31-05 PTI 02-11383	Emissions of particulate matter from fabric filter baghouse shall not exceed 0.01 gr/dscf of exhaust gases and 0.17 lb/hr. Emissions of particulate matter from scrubber shall not exceed 0.03 gr/dscf of exhaust gases and 0.25 lb/hr. Total particulate matter emissions shall not exceed 1.88 tpy. Visible particulate emissions shall not exceed 5% opacity as a six-minute average.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The collection efficiency of the air pollution capture hoods for emissions unit P099 shall be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at all points of capture. Applicant shall maintain all hoods and enclosures in good operating condition. The collection efficiency shall be considered adequate if visible particulate emissions of fugitive dust do not exceed 20% opacity as a three-minute average.
2. The pressure drop across the scrubber shall be continuously maintained at a value of not less than 2 inches of water at all times while the emissions unit is in operation.

The scrubber water flow rate shall be continuously maintained at the value (gallons per minute) recommended by the manufacturer at all times while the emissions unit is in operation.
3. The pressure drop across the baghouse shall be maintained within the range of 3 to 5 inches of water while the emissions unit is in operation.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: PK BLENDER #2 (E-103) (P099)

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information once each day:

- a. The pressure drop across the scrubber, in inches of water.
 - b. The scrubber water flow rate, in gallons per minute.
2. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across the scrubber.
 - b. The scrubber water flow rate.
2. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

V. Testing Requirements

1. Compliance with the emission limitations in section B.I of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limit for PM: 0.01 gr/dscf of exhaust gases from fabric filter and 0.17 lb/hr

Applicable compliance method: Compliance with the above limitation shall be demonstrated by stack testing using the procedures of U.S. EPA reference Method 5, if required by the Ohio EPA.

- b. Emission Limit for PM: 0.03 gr/dscf of exhaust gases from scrubber and 0.25 lb/hr

Applicable compliance method: Compliance with the above limitation shall be demonstrated by stack testing using the procedures of U.S. EPA reference Method 5, if required by the Ohio EPA.

- c. Emission Limit: 1.88 tons per year PM

Applicable compliance method: Compliance with the above limitation shall be demonstrated by calculations, using the design control efficiency of the fabric filter and the amount of material collected by the fabric filter.

- d. Emission Limit: Visible emissions not to exceed 5% opacity as a six-minute average from any stack

Applicable compliance method: Compliance with the above limitation shall be demonstrated by U.S. EPA reference Method 9.

2. Compliance with the visible emission limitation in section B.II of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limit: Visible emissions not to exceed 20% opacity as a three-minute average

Applicable compliance method: Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: PK BLENDER #2 (E-103) (P099)

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #2 (E-8) (P100)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: TUNNEL KILN #2 (E-8) (P100)
Activity Description: Natural gas fired tunnel kiln in Bldg. 10, 2.8 MMBtu/hr, direct-fired

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Tunnel kiln #2 in bld. 10, with a fabric filter baghouse	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 1.07 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #2 (E-8) (P100)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.07 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #2 (E-8) (P100)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #3 (E-8) (P101)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: TUNNEL KILN #3 (E-8) (P101)

Activity Description: Natural gas fired tunnel kiln in Bldg. 10, 2.8 MMBtu/hr, direct-fired

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Tunnel kiln #3 in bld. 10, with a fabric filter baghouse	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 1.07 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #3 (E-8) (P101)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.07 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #3 (E-8) (P101)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: TUNNEL KILN #3 (E-8) (P101)

Activity Description: Natural gas fired tunnel kiln in Bldg. 10, 2.8 MMBtu/hr, direct-fired

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Tunnel kiln #3 in bld. 10, with a fabric filter baghouse	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 1.07 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #3 (E-8) (P101)

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.07 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: TUNNEL KILN #3 (E-8) (P101)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #2 (P102)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ROTARY CALCINER #2 (P102)
Activity Description: GENERAL CATALYST CALCINER # 2 IN BLDG. 31

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Rotary calciner #2 in bldg. 31 with a fabric filter baghouse (process equipment)	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 1.62 pounds per hour
Rotary calciner #2 in bldg. 31(fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
Rotary calciner #2 in bldg. 31(all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. Monitoring and/or Record Keeping Requirements for process equipment

The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #2 (P102)

III. Monitoring and/or Record Keeping Requirements (continued)

3. On at least one day of each calendar quarter (January through March, April through June, July through September, and October through December), the permittee shall determine the opacity of the stack gases, in accordance with U.S. EPA Reference Method 9, for a period of not less than sixty consecutive minutes while the emissions unit is in operation. The process weight rate and the type of material being calcined shall be recorded for the period during which the stack gases' opacity was recorded.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit opacity deviation (excursion) reports that identify all periods of time during which the emissions unit did not comply with the opacity limit specified above. These reports shall include the average opacity observed, in six-minute blocks, the process weight rate during the observation period and the type of material being processed.

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.62 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9.
3. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
 Facility ID: 02-47-04-0195
 Emissions Unit: ROTARY CALCINER #2 (P102)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Rotary calciner #2 in bldg. 31 with F-1 scrubber, Trimer scrubber and Salem-Engelhard SCR unit for NOx control (process equipment)		

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. NOx emissions from this emissions unit shall be controlled by one of the following air pollution control equipment: the F-1 scrubber, the Trimer Scrubber or the Salem-Engelhard Selective Catalytic Reduction (SCR) unit.

2. Trimer Scrubber Operational Restrictions

The pressure drop across the second stage of the scrubber shall be continuously maintained between 1 and 3 inches of water at all times while the emissions unit is in operation.

The pressure drop across the third stage of the scrubber shall be continuously maintained between 3 and 5 inches of water at all times while the emissions unit is in operation.

The scrubber water flow rate to each stage of the scrubber shall be continuously maintained at a value of not less than 50 gallons per minute at all times while the emissions unit is in operation.

3. Trimer pH Operational Restrictions

The pH of the scrubber liquor shall be maintained between 10 and 12 s.u.

III. Monitoring and/or Record Keeping Requirements

1. Trimer Scrubber Monitoring and Recordkeeping Requirements

The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber stages and the scrubber water flow rate to each stage while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day (at a minimum):

- a. The pressure drop across each stage of the scrubber, in inches of water, on a once per shift basis.
- b. The scrubber water flow rate to each stage of the scrubber, in gallons per minute, on a once per shift basis.
- c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #2 (P102)

III. Monitoring and/or Record Keeping Requirements (continued)

2.a. Trimer scrubber pH Monitoring and Recordkeeping Requirements

The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

2.b. The permittee shall record the pH of the scrubber liquor on a once per shift basis.

IV. Reporting Requirements

1. Trimer Scrubber Reporting Requirements

The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

- a. The static pressure drop across each scrubber stage.
- b. The scrubber water flow rate to each stage.

2. Trimer Scrubber pH Reporting Requirements

The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #3 (P103)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ROTARY CALCINER #3 (P103)
Activity Description: GENERAL CATALYST CALCINER # 3 IN BLDG. 31

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Rotary calciner #3 in bldg. 31 with fabric filter baghouse (process equipment)	OAC rule 3745-17-11(B)(1)	Emissions of particulate matter shall not exceed 1.62 pounds per hour
Rotary calciner #3 in bldg. 31(fuel burning equipment)	OAC rule 3745-17-10(A)(1)	Emissions of particulate matter shall not exceed 0.020 lb/MMBTU actual heat input
Rotary calciner #3 in bldg. 31(all equipment)	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. Monitoring and/or Record Keeping Requirements for process equipment

The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to eliminate the visible emissions.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #3 (P103)

III. Monitoring and/or Record Keeping Requirements (continued)

3. On at least one day of each calendar quarter (January through March, April through June, July through September, and October through December), the permittee shall determine the opacity of the stack gases, in accordance with U.S. EPA Reference Method 9, for a period of not less than sixty consecutive minutes while the emissions unit is in operation. The process weight rate and the type of material being calcined shall be recorded for the period during which the stack gases' opacity was recorded.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit opacity deviation (excursion) reports that identify all periods of time during which the emissions unit did not comply with the opacity limit specified above. These reports shall include the average opacity observed, in six-minute blocks, the process weight rate during the observation period and the type of material being processed.

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 1.62 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.
3. Compliance with the particulate matter emission limitation of 0.020 lb/MMBTU actual heat input shall be determined in accordance with OAC rule 3745-17-03(B)(9). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Rotary calciner #3 in bldg. 31 with F-1 scrubber, Trimer scrubber and Salem-Engelhard SCR unit for NOx control (process equipment)		

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. NOx emissions from this emissions unit shall be controlled by one of the following air pollution control equipment: the F-1 scrubber, the Trimer Scrubber or the Salem-Engelhard Selective Catalytic Reduction (SCR) unit.

2. Trimer Scrubber Operational Restrictions

The pressure drop across the second stage of the scrubber shall be continuously maintained between 1 and 3 inches of water at all times while the emissions unit is in operation.

The pressure drop across the third stage of the scrubber shall be continuously maintained between 3 and 5 inches of water at all times while the emissions unit is in operation.

The scrubber water flow rate to each stage of the scrubber shall be continuously maintained at a value of not less than 50 gallons per minute at all times while the emissions unit is in operation.

3. Trimer pH Operational Restrictions

The pH of the scrubber liquor shall be maintained between 10 and 12 s.u.

III. Monitoring and/or Record Keeping Requirements

1. Trimer Scrubber Monitoring and Record keeping Requirements

The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber stages and the scrubber water flow rate to each stage while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day (at a minimum):

- a. The pressure drop across each stage of the scrubber, in inches of water, on a once per shift basis.
- b. The scrubber water flow rate to each stage of the scrubber, in gallons per minute, on a once per shift basis.
- c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: ROTARY CALCINER #3 (P103)

III. Monitoring and/or Record Keeping Requirements (continued)

2.a. Trimer scrubber pH Monitoring and Recordkeeping Requirements

The permittee shall properly operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

2.b. The permittee shall record the pH of the scrubber liquor on a once per shift basis.

IV. Reporting Requirements

1. Trimer Scrubber Reporting Requirements

The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

- a. The static pressure drop across each scrubber stage.
- b. The scrubber water flow rate to each stage.

2. Trimer Scrubber pH Reporting Requirements

The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: IRON CATALYST MIXING (E-104) (P104)

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: IRON CATALYST MIXING (E-104) (P104)

Activity Description: IRON CATALYST MIXING

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Iron catalyst mixing line with a fabric filter baghouse	OAC rule 3745-17-11(B)(1) OAC rule 3745-17-07(A)(1)	Emissions of particulate matter shall not exceed 2.4 pounds per hour Visible particulate emissions shall not exceed 20% opacity as a six minute average except as provided by rule

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The pressure drop across the baghouse shall be maintained within the range of 3 to 5 inches of water while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

V. Testing Requirements

1. Compliance with the particulate matter emission limitation of 2.4 pounds per hour shall be determined in accordance with OAC rule 3745-17-03(B)(10). No testing is specifically required by this permit but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A). Such testing may be required at opacity levels less than those required by the visible emissions limit in Section A.I.
2. Compliance with the visible emission limitation shall be determined by using U.S. EPA Method 9, if required by the Ohio EPA.

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: IRON CATALYST MIXING (E-104) (P104)

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORPOF
Facility ID: 02-47-04-0195
Emissions Unit: IRON CATALYST MIXING (E-104) (P104)

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Iron catalyst mixing line with a fabric filter baghouse	OAC 3745-31-05 PTI 02-12141	Emissions of particulate matter shall not exceed 0.01 gr/dscf of exhaust gases from fabric filter baghouse, 0.34 pound per hour and 1.5 tons per year. Visible particulate emissions from baghouse stack shall not exceed 5% opacity as a six minute average.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The collection efficiency of the air pollution capture hoods for emissions unit P104 shall be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at all points of capture. The permittee shall maintain all hoods and enclosures in good operating condition. The collection efficiency shall be considered adequate if visible particulate emissions of fugitive dust do not exceed 0% opacity from any building egress points.

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP OF
Facility ID: 02-47-04-0195
Emissions Unit: IRON CATALYST MIXING (E-104) (P104)

V. Testing Requirements

1. Compliance with the emission limitations in section B.I of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limit for PM: 0.01 gr/dscf of exhaust gases from fabric filter and 0.34 lb/hr
Applicable compliance method: Compliance with the above limitation shall be demonstrated by stack testing using the procedures of U.S. EPA reference Method 5, if required by the Ohio EPA.
 - b. Emission Limit: 1.5 tons per year PM
Applicable compliance method: Compliance with the above limitation shall be demonstrated by calculations, using the design control efficiency of the fabric filter and the amount of material collected by the fabric filter.
 - c. Emission Limit: Visible emissions not to exceed 5% opacity from baghouse stack
Applicable compliance method: Compliance with the above limitation shall be demonstrated by U.S. EPA reference Method 9.
2. Compliance with the visible emission limitation in section B.II of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limit Visible emissions not to exceed 0% opacity from any building egress point
Applicable compliance method: Compliance with the above limitation shall be demonstrated by U.S. EPA reference Method 22.

VI. Miscellaneous Requirements

None

Facility Name: HARSHAW CHEMICAL CO. AKA ENGELHARD CORP
Facility ID: 02-47-04-0195

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